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is reputed to have built more bridges than any other living engineer, and presents an interesting account of his experiences. The next two give the results of a series of experimental determinations of the temperatures mentioned in the title. In the fourth paper the results are detailed of an extended series of experiments on a difficult subject and the final attainment of a feasible and a not too long method. The fifth paper, which will be a serial, contains the opening chapters of a manual on rocks for use without the microscope. The last paper emphasizes the importance of teaching architecture as an art, comparable with artists' as distinguished from engineers' or artisans' work. As outlining a future policy for our schools of architecture it has important bearings.

SOCIETIES AND ACADEMIES.

NEW YORK ACADEMY OF SCIENCES, SECTION OF BIOLOGY.

THE following papers were presented on December 9th:

Prof. C. L. Bristol: 'The Classification of Nephelis in the United States.' The study of abundant material, collected from Maine to South Dakota, has shown that the color characters cannot be depended upon for specific determination. An examination of the metameral relations of this leech indicates that no more than a single species occurs in this country.

Prof. H. F. Osborn: 'Titanotheres of the American Museum of Natural History.' The complete skeleton of *Titanotherium robustum* is remarkable in possessing but twenty dorso-lumbar vertebræ, a number identical with that typical of the *Artiodactyla*, but entirely unique among *Perissodactyla*. It now appears probable that the development of horns in the *Titanotheres* became a purely sexual character, and that the genera *Titanops*, *Marsh*, and *Brontops*, *Marsh*, are founded respectively upon male and female individuals of *Titanotherium robustum*.

Dr. J. L. Wortman: 'The Expedition of 1895 of the American Museum of Natural History.' The expedition passed into the Unita beds of northeastern Utah, then between the eastern escarpment of the Unita range and the Green River into the Washakie Beds of south-

western Wyoming, the most important result geologically being that the Brown Park deposit is found to be of much later age than the Unita.

BASHFORD DEAN,
Rec. Sec'y, Biological Section.

SECTION OF GEOLOGY AND MINERALOGY.

THE Section of Geology and Mineralogy of the New York Academy of Sciences assembled for its regular monthly meeting Monday, December 16, 1895, Prof. J. J. Stevenson presiding.

The first paper was by Prof. H. P. Cushing, 'Notes on the Areal Geology of Glacier Bay, Alaska.' The paper will appear in full and with a geological map in Vol. 15 of the *Transactions of the Academy*, but the following is an abstract:

After an introduction which outlined the previous work in the region by Dr. H. F. Reid and the writer and the petrographical determination of the rocks that had been collected by them, and that had been studied by the late Dr. George H. Williams and the writer, a description of the general geology was given, based upon a geological map.

Mr. Cushing shows that the rocks present are argillites, limestone, quartz-diorite, diorite, crystalline schists and dikes of diabase. The argillites have a wide distribution around the eastern side of the Muir glacier basin, and also form the mountains adjacent to Muir Inlet. They present three main phases: First, very hard, fine grained argillo-siliceous beds, gray to brown in color, occasionally approaching quartzite in character. Second, blue and black, somewhat slaty rocks, nearly as hard as the first, and equally fine grained, but less siliceous, although containing only a slight amount of calcareous matter. Third, thin bands of black graphitic slates, with good slaty cleavage, and interstratified with the other two varieties. No fossils were found, although careful search was made.

The limestone is called the 'Glacier Bay Limestone.' It is dolomitic, and for the most part extremely pure, containing only a trace of insoluble matter. Fossils were rare and so damaged by metamorphism as to be unrecognizable. But in 1893 a fossil coral was brought

from the region by Prof. Stevenson, which had certainly been derived from this limestone. It was identified by Prof. H. S. Williams as a species of *Lonsdaleia*, and was regarded as demonstrative of the carboniferous age of the beds.

The quartz-diorite is a homogeneous rock, consisting of white plagioclase, with frequent thin prisms of hornblende, and occasional biotites and some quartz. A contact was found between it and the argillites which seemed clearly an irruptive one. Other contacts observed by Dr. Reid with the limestone also indicated contact metamorphism.

The diorite is a more basic rock than the quartz-diorite, and is found in the moraines. It has probably come from the mountains, which have yet proved inaccessible.

The crystalline schists embrace mica schists and actinolite schists and were obtained from erratic blocks.

The diabase dikes have all been intruded since the metamorphism of their wall rocks and are the latest rocks in the region. Mr. Cushing gives a detailed comparison of these rocks with other Alaskan sections, noting many parallel features and some contrasts. The paper concludes with a detailed petrographical description of the crystalline rocks.

The second paper of the evening was by Heinrich Ries, on 'The Geology of Orange County, New York.' Mr. Ries gave a resumé of the results obtained by him while in the field the past summer under Prof. James Hall, State Geologist, to whom the report will be made. The paper was extemporaneous and was not intended for publication. It was illustrated by numerous lantern views and geological sections.

The third paper was by Theodore G. White, on 'The Faunas of the Upper Ordovician Strata at Trenton Falls, New York.' Mr. White described the results of a visit to this, the typical locality of the Trenton formation, and of a detailed study of the faunas of each stratum of the limestones at Trenton Falls, and Poland, Oneida County, New York. The work was undertaken in connection with a doctorate thesis on the Trenton Faunas of the Lake Champlain Valley, which will be submitted in the spring to the

Faculty of Columbia College. The faunal lists at Trenton Falls will be published in full in the Transactions of the Academy of current date.

By making use of conspicuous and constant layers as datum planes, the thickness of the beds in the Trenton Falls gorge was found to be 331 feet. On the same creek, three miles below Poland, underlying strata were found as follows:

Black River limestone, 11 feet 9 inches.

'Dove' limestone, 5 feet 1 inch.

Calciferous strata, 8 feet.

Various peculiar distortions of the beds in the Trenton Falls gorge was also shown and discussed.

The paper was illustrated by numerous lantern views from photographs.

The fourth paper of the evening by J. F. Kemp and T. G. White, 'Additional Notes on the Distribution and Petrography of the Trap Dikes in the Lake Champlain Region,' was postponed until the next meeting, on account of the lateness of the hour.

J. F. KEMP,
Secretary.

BIOLOGICAL SOCIETY OF WASHINGTON, 250TH MEETING, NOVEMBER 30.

THE first paper, *Some Fundamentals of Nomenclature*, by Dr. Edward L. Green, is printed in abstract in this journal.

Mr. Theo. Holm made some *Contributions to the Flora of the District of Columbia*, illustrating the same by specimens. Since the publication of the third list of additions to the flora many rare plants have been reported, some of which are new to the District. It was shown that the genus *Panicum* is exceedingly well represented in the local flora, and seven species were enumerated as not having been before reported. *Sporobolus vaginæflorus*, which was formerly known only from one locality, has now spread to several distant places and may be considered as rather common. Several rare Cyperaceæ were reported, among which *Kyllinga pumila* and *Cyperus aristatus* were new to the flora. The genus *Polygala* appears, like *Panicum*, to be widely distributed in the District, and *P. ambigua*, *P. incarnata* and *P. verticillata* were reported from several places. *Plantago Patagonica*,

var. *aristata*, had commenced to spread so as to become a weed in the eastern part of the District. After enumerating a number of similar plants rare in the District, the speaker made some brief remarks upon the morphology of some of these, *e. g.*, *Pogonia ophioglossoides*, *Orchis spectabilis*, *Smilax herbacea*, etc.

The evening was devoted to an address by the President, Surgeon General George M. Sternberg, U. S. A., on the Practical Results of Bacteriological Researches.

F. A. LUCAS,
Secretary.

ANTHROPOLOGICAL SOCIETY OF WASHINGTON.

At the 241st meeting of the Society held December 17th, a paper on 'The Animistic Vampire in New England' was read by George R. Stetson. This superstition of ancient Babylonia, Chaldea and the far East by some mysterious survival, occult transmission or remarkable atavism, is prevalent in the scattered hamlets and more pretentious Villages of central Rhode Island. It is an extraordinary instance of a barbaric superstition out cropping in, and coexisting with a high general culture, and which is not so uncommon, if rarely so extremely aggravated, crude and painful.

The superstition is there unknown by its proper name. The local belief, however, precisely corresponds to the statement of the vampire superstition contained in Calmet's 'Traité sur les apparitions des esprits et sur les vampires ou les revenans de Hongrie, de Moravie, etc,' Paris, 1751, and as it now survives in eastern and western Europe.

It is, that a wasting disease is not a physical, but a spiritual ailment, obsession or visitation; that as long as the body of a dead relative of the person attacked has blood in its heart it is proof that an occult influence steals from it for death, and is at work draining the blood of the living into the heart of the dead and causing his rapid decline and death.

As in the middle age, the Rhode Island vampire is located, if, on opening the grave, the body is found to be of a rose color, the beard, hair or nails renewed and the veins and heart filled with blood.

The means taken for relief are also precisely

those followed in parts of the Levant and elsewhere, viz: exhumation of the body and burning the heart and scattering its ashes to the winds. The persons indulging in this superstition in Rhode Island are not foreigners, but native born New Englanders. It is declared upon excellent authority to be prevalent in all the isolated districts of the southern parts of the State and that many instances of it can be found in the large centers of population.

As to its origin in Rhode Island there is no record; it is in all probability an exotic like ourselves, originating in the mythographic period of the Aryan and Semitic peoples.

No known precise parallel in the western Indian mythology has come to our knowledge. The Ojibwas and Cherokees have, however, something analagous.

Abundant evidence is at hand that the animistic vampire superstition still retains its hold in its original habitat; an illustration of the remarkable tenacity and continuity of a superstition through centuries of intellectual progress from a lower to a higher culture, and of the impotency of the latter to entirely eradicate from itself the traditional beliefs, customs, habits, observances and impressions of the former.

Mr. William Eleroy Curtis read a paper on the Regulation of the Social Evil in Japan, reviewing the legislation and imperial edicts that have appeared on that subject and describing the present method of confining prostitution to certain quarters of the cities and towns and making those who practice that profession practically prisoners under the constant surveillance of the police. The government of Japan prohibits any woman from following the business of a courtesan without the written consent of her parents, or her guardian, if she be an orphan, and requires her to make a contract for a term of years with the keeper of some hashi-zashiki; as the houses of prostitution are called. During this period she is not permitted to leave the limit of the Yoshiwara, as the quarter is designated, except on certain occasions which are enumerated in the law, or upon the expression of a desire to reform. When her contract is cancelled her license is surrendered, and she becomes a ticket-of-leave woman, subject to police surveillance until she

has demonstrated the sincerity of her intention to lead a different life. The patrons of the Yoshiwara are required to register their names, residences and occupations in books that are always accessible to the public and the police, and an account of their expenditures is accurately kept.

Mr. Curtis asserts that this system has been remarkably successful both from a sanitary and a moral point of view.

ENTOMOLOGICAL SOCIETY OF WASHINGTON.

THE 112th regular meeting was held December 5, 1895. Mr. Hubbard read a paper on 'Distribution of Certain Species of *Mytilaspis*.' He spoke of the unreliability of tradition and early records as a source of exact knowledge concerning the introduction and spread from one country to another of scale insects which are so easily transported and difficult of specific identification. He referred particularly to the published accounts of the introduction into Florida of *Mytilaspis gloveri* and *M. citricola*. The former is supposed to have been brought to Mandarin in 1838 by Mr. Robinson, on two trees obtained in New York from a ship which came from China, and the latter was said to have been brought to Florida some years later upon lemons from Bermuda. According to the speaker, both of these positive statements, hitherto unchallenged, are probably erroneous. The insect mentioned by Glover as having been brought from Bermuda is not a *Mytilaspis*, and *M. citricola* at that time had not yet reached Europe from the East. It certainly did not reach Florida much before 1880. *M. gloveri* is to-day the principal pest of the orange in the interior of Mexico, and it is probable that it was introduced with the orange into Florida and Mexico by the Spaniards at the end of the 16th or beginning of the 17th century. Its appearance in 1838 was only the continuation of an epidemic of Coccid pests of the orange which is known to have overwhelmed the citrus plantations of Europe in the early part of the century, and to have spread westward some-time later to the Azores, Canaries, and finally to Bermuda. The speaker suggested that the obvious tendency to variation in form and thickness among the scales of *Mytilaspis* had

produced in North America from an original tropical species *M. pomorum*, *M. citricola* and *M. gloveri*.

Dr. Stiles exhibited a *Dermestes* larva taken from a corpse 3 to 6 months after death. He referred to the statement by Mégnin in his 'La Faune des Cadavres,' that the period from burial of a corpse to its final dissolution may be divided into eight portions, each of these portions being characterized by the presence of a different series of insects. In regard to the manner in which insects gain access to a corpse, Mr. Hubbard said that with the *Diptera* the egg must be deposited on the outside of the coffin before burial, since he does not believe it possible for the young larva to make its way through the soil after burial. Dr. Stiles said that he did not agree with Mégnin in many of his conclusions, but considered the field a very interesting one for investigation by entomologists.

L. O. HOWARD,
Secretary.

[Abstract of report by D. W. Coquillett,
Acting Secretary.]

ACADEMY OF SCIENCE, ST. LOUIS, DECEMBER
16, 1895.

THE Academy held its regular meeting at the Academy rooms with President Green in the chair and twenty-eight members and visitors present.

The committee to nominate officers for the ensuing year made report of following nominations:

President, Melvin L. Gray.
1st Vice-President, Edmund A. Engler.
2d Vice-President, Robert Moore.
Corresponding Secretary, Allerton S. Cushman.
Recording Secretary, Wm. Trelease.
Treasurer, Enno Sander.
Librarian, Gustav Hambach.
Directors, John Green, Adolph Herthel.
Curators, Julius Hurter, Herbert A. Wheeler,
George R. Olshausen.

Prof. J. H. Kinealy presented his new instrument for testing the purity of air in buildings and gave an explanation of the method employed.

A. W. DOUGLAS,
Recording Secretary.